



Contingency Plans 101: A Project Manager's Guide

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Project management and contingency plans

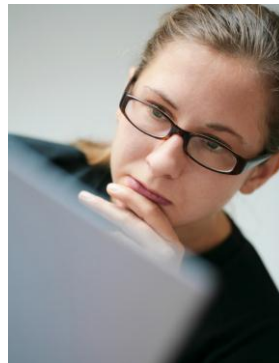
Contingency plans tend to be the most overlooked and unappreciated aspect of project management. From NPR 7120.5, NASA Space Flight Program and Project Management Requirements:

- ✧ Develop a preliminary Mishap Preparedness and Contingency Plan in accordance with NPR 8621.1, Mishap and Close Call Reporting, Investigating, and Recordkeeping.



Program Mishap Preparedness and Contingency Plans

A program mishap preparedness and contingency plan is a comprehensive plan for all mishaps and closed calls that occur onsite, at offsite program/project (as defined by NPR 7120.5) contractor sites, or in flight. This plan is developed for a specific program or project, by the responsible center safety office and the program manager concurs. It is consistent with the centers' mishap preparedness and contingency plans and covers any information and procedures required specifically by that program, which are not covered in the center's preparedness and contingency plans.



When should you have the contingency plan completed?

- ✧ Preliminary contingency plan should be completed during Phase B of the project life cycle, in preparation for the PDR,
- ✧ Contingency plan should be updated during phase C for the CDR and phase D for the ORR,
- ✧ Contingency plan should be baseline for the flight readiness review or SMSR.



What should you find inside a contingency plan?

Program Mishap Preparedness and contingency plan contains procedures such as:

- ✧ Checklist,
- ✧ Appointing response teams
- ✧ Off-site emergency response; impounding evidence off site including a list of evidence and where it can be obtained,
- ✧ Describing the “Chain of custody process” to secure personnel effects and sensitive information related to injured or deceased individuals,
- ✧ Providing the information technology plan (computer data retrieval, data archive support) to the investigation authority,
- ✧ The handling of off-site debris.



What should you find inside a contingency plan?

The Program Mishap Preparedness and Contingency Plan identifies:

- ✧ Requirements regarding international partners, training, and the IRT's membership for certain program/project mishaps and close calls,
- ✧ Key personnel from the Agency public affairs office (PAO) and Office of External Relations (OER) to notify for all type A and B Mishaps,
- ✧ Other national, state or local agencies that are likely to participate,
- ✧ The federal employee responsible for the "chain of custody process."



What should you find inside a contingency plan?

The Program Mishap Preparedness and Contingency Plan lists:

- ✧ The hazardous materials and devices and
- ✧ Any special safing and handling procedures and processes.
- ✧ The plan also specifies the expiration date.



Do you know the definitions of close calls or Mishaps?



Mishap

A NASA mishap is an unplanned event that results in at least one of the following:

- ✧ Injury or death to non-NASA personnel, caused by NASA operations;
- ✧ Damage to property caused by NASA operations, development or research projects;
- ✧ Occupational death, injury or illness to NASA personnel;
- ✧ NASA mission failure before the scheduled completion of the planned primary mission;
- ✧ Destruction or damage to NASA property

Do you know the definitions of close calls or Mishaps?

Close Call

A NASA close call is an event that results in a potential to cause a mishap in at least one of the following:

- ✧ No injury or only minor injury requiring first aid
- ✧ No equipment/property damage or minor equipment/property damage (less than \$1000).

Appointing Official (AO)

Your Appointing Official (AO), or Mishap Program manager will be looking at the following to determine if an investigation is warranted.

(Do you know who they are at your center?)

They will look at the following:

- ✧ Contingency Plan
- ✧ Is it a high visibility event
- ✧ Costs, injuries and impact to the mission



What are the risk if you do not have the proper clauses?

High Visibility Events

High visibility events are those particular mishaps or close calls, regardless of the amount of property damage or personnel injury, that the Administrator, Associate Administrator (AA), Chief Office of safety and Mission Assurance (Chief/OSMA), the Designated Agency Safety and Health Official (DASHO), Center Director, or the Assistant Administrator, office of Infrastructure and Administration (AA/OAI) judges to possess a high degree of programmatic impact or public, media, or political interest including but not limited to, mishaps and close calls that impact flight hardware, flight software, or completion of critical mission milestones.



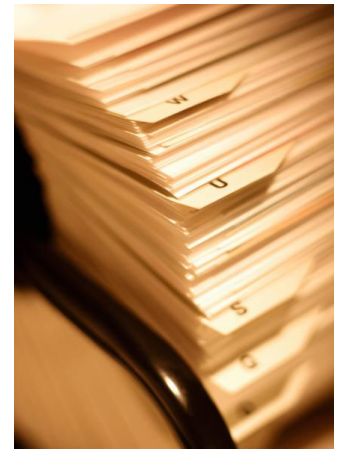
Contract Clauses

Do you have close call and mishap clauses in your contracts?

NASA requires that appropriate mishap and close call notification reporting, recording, and investigation procedures are written into contracts. The objective is to write contract clauses to ensure contractor compliance to NASA's mishap investigation policy and processes.

The four topics that contract clauses must cover are:

- ✧ Mishap Notification
- ✧ Mishap Reporting
- ✧ Investigating
- ✧ Recordkeeping



Example

Contractor built article on your NASA test bed

The contingency plan states that the article is the responsibility of the contractor.

If the article is damaged who investigates?

If the article is damaged who decides the classification of the mishap?

If the article is damaged who decides the degree of investigation?

What if there are repeat mishaps to the test article?

Is there a clause in the contingency plan for a transfer of investigation control of the article?

For instance if you have 10 instead of 2 close calls when does NASA take over?

Who is responsible for the Corrective Action?

What if this test article is the only one for the program?

What is not considered a Mishap?

Weather and Natural Phenomenon:

- Property damage directly resulted from one of the following weather conditions:
- Hurricane, lightening, tornado, high winds, dust storm, wild fire, tidal wave, tsunami, water spout, or ice/snow loads



External Events:

- Proper damage or personnel injuries resulted from vandalism, riots, civil disorders or felonious acts such as arson or stealing.

Injuries and Illnesses or fatalities:

- Illness or fatalities due to natural causes or diseases.
- Suicide or intentionally self-inflicted injuries.
- Injuries or fatalities resulting from altercations, attack assault or homicide.



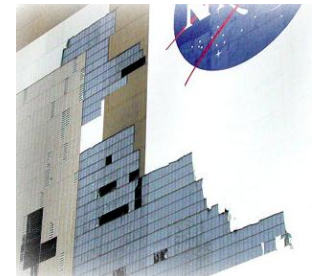
Testing:

Property damage caused by testing is not considered a NASA mishap or close call when:

- A test failure involves damage limited to the test article.
- Risk of damage was formally documented and accepted before the test.

Property Damage:

- The property damage that is not a mishap includes four subcategories
- Weather & Natural phenomenon, External Events, Normal Wear and Tear, Testing.



Example

NASA article on a contractor test bed

The contingency plan should state who is responsible for any damage. (ie who pays for it?) Is it in the contract, rental agreement or equipment agreement?

If this is not clear you will have an investigation on your hand.

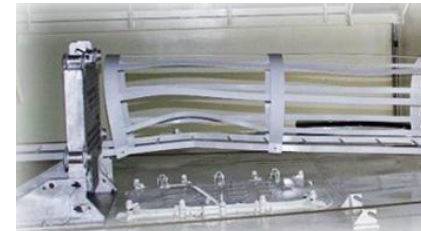
Mishap Classification Criteria

Classification Level & Investigation Type	Property Damage	Injury
Type A Mishap	Total direct cost of mission failure and property damage is \$2,000,000 or more, <i>or</i> Crewed aircraft hull loss has occurred, <i>or</i> Occurrence of an unexpected crewed aircraft departure from controlled flight (except high performance jet/test aircraft such as F-15, F-16, F/A-18, T-38, OV-10, and T-34, when engaged in flight test activities).	Occupational injury and/or illness that resulted in: A fatality, <i>or</i> A permanent total disability, <i>or</i> The hospitalization for inpatient care of 3 or more people within 30 workdays of the mishap.
Type B Mishap	Total direct cost of mission failure and property damage of at least \$500,000 but less than \$2,000,000.	Occupational injury and/or illness has resulted in permanent partial disability. <i>or</i> The hospitalization for inpatient care of 1-2 people within 30 workdays of the mishap.
Type C Mishap	Total direct cost of mission failure and property damage of at least \$50,000 but less than \$500,000.	Nonfatal occupational injury or illness that caused any workdays away from work, restricted duty, or transfer to another job beyond the workday or shift on which it occurred.
Type D Mishap	Total direct cost of mission failure and property damage of at least \$1,000 but less than \$50,000.	Any nonfatal OSHA recordable occupational injury and/or illness that does not meet the definition of a Type C mishap.
Close Call	An event in which there is no equipment/property damage or minor equipment/property damage (less than \$1000), but which possesses a potential to cause a mishap.	An event in which there is no injury or only minor injury requiring first aid, but which possesses a potential to cause a mishap.

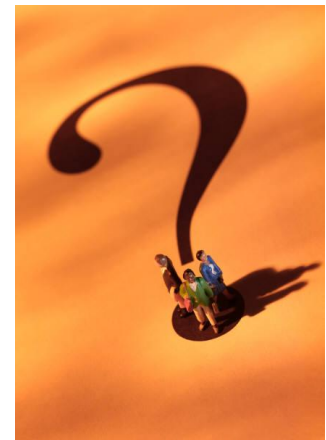
Once a mishap occurs, it must be classified immediately: This determines the type of investigation to be conducted.

Mishaps are classified based on:

- ✧ Severity of property damage (measured in dollar loss)
- ✧ Mission failure (Measured in dollars loss)
- ✧ Severity of injury or illness
- ✧ High visibility incidents where regardless of the severity of injury or amount of property damage there was a significant impact to a program and/or Public, media or political interest.



What happens if you do have to have an investigation?



If it is a Safety investigation;

- ✧ The AO requests the contingency plan,
- ✧ AO creates a team or sole investigator to investigate.
- ✧ A safety investigation does not assess blame or criminal intent it's only purpose of the is to prevent a recurrence of the undesired outcome,
- ✧ A cause is determined and the investigator gives recommendations for preventing recurrence,
- ✧ This purpose is complete distinct form any proceeding the agency may undertake to determine civil, criminal, or administrative culpability or liability,
- ✧ There will be corrective actions,
- ✧ The project **pays** for the investigation

Corrective Action Plan (CAP)



The Corrective Action Plan must include a description of the corrective actions with:

- ✧ The names of the responsible organization (RO) for implementation and
- ✧ Completion dates for each corrective action.

The responsible organization implements the corrective action plan and:

- ✧ Tracks corrective action completion in the Incident Reporting Information System (IRIS),
- ✧ Reports the status of the corrective actions to the AO,
- ✧ If changes to the CAP are needed, submits the change to the Appointing Official for approval
- ✧ Once changes are approved, they are sent to the responsible organization and the Center safety office.



Conclusion

- ✧ NPR 7120.5, Develop a preliminary Mishap Preparedness and Contingency Plan in accordance with NPR 8621.1,
- ✧ Know your contingency plan,
- ✧ Formally accept and document risk of damage before the test.
- ✧ Know the definition of a mishap or close call,
- ✧ Be prepared if a close call or mishap occurs (do you have a checklist?),
- ✧ Understand the investigation process,
- ✧ Understand the CAP process.



Questions?

